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The clear aperture of the object-glass of the S.E. Equatorial is 12·8 inches; of the E. Equatorial, $6\frac{3}{4}$ inches; of the Altazimuth, 4 inches; and of the Simms' Equatorial, 6 inches.

The initials W. C., H. T., A. D., M., T., L., H., A. P., B., and S. D., are those of Mr. Christie, Mr. Turner, Mr. Downing, Mr. Maunder, Mr. Thackeray, Mr. Lewis, Mr. Hollis, Mr. Pead, Mr. Bennett, and Mr. Dolman.

Occultations of Stars by the Moon, and Phenomena of the Satellites of Jupiter and Saturn, observed at Mr. Edward Crossley's Observatory, Bermerside, Halifax, in the year 1884, with the $9\frac{1}{3}$-inch Cooke Refractor. By Joseph Gledhill, F.R.A.S.

Lunar Occultations.

			G.M.T.				
1884.			h	m	s		
Oct.	4	No. 61	9	22	42	R.	Power 62: bad sky.
		No. 63	9	35	55	R.	Mr. Crossley was at the telescope and Mr. Gledhill at the chronometer.
		No. 76	9	28	2	R.	
		No. 85	9	25	52	D.	
		No. 82	9	25	40	D.	
			10	37	28	D.	Small double star; angle about 140° from N.
			10	45	36	D.	Small star; angle about 45°.
			9	44	30	D.	„ „ 170°.
	5	*o* Piscium	9	8	0		Near approach; distance from nearest point of limb 3′ 14″. Power 60.
	12	*α* Cancri	18	1	33	D.	Power 240.
Nov.	5	111 Tauri	9	9	5	D.	Power 62.
		115 Tauri	10	2	7	D.	„
			10	46	40	R.	„
	7	68 Gemin.	11	15	59	D.	„
			12	16	19	R.	„
	9	*h* Leonis	13	59	59	D.	Thin cloud near Moon.
			15	4	35	R.	Clear sky. Power 62.
	11	76 Leonis	The star escaped occultation.				
	25	*θ* Aquarii	5	39	7	D.	Bad sky. Power 62.
			6	52	12	R.	„ „
	29	*o* Piscium	The star escaped occultation.				
Dec.	3	B.A.C. 1930	Watched from 10.10 till 10.51; no star seen near Moon.				

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Phenomena of Jupiter's Satellites.

				G.M.T. h m s	N.A. h m s	
1884, Jan. 7	I.	Ec. D.	Just gone	11 21 25	11 21 14	Fair definition.
11	II.	Sh. I.			8 0 0	Shadow very faint; not well seen till 8.15 P.M.
	II.	Tr. I.	Outer contact	8 22 ±	8 25 0	Good definition now and then.
			Bisection	8 24 ±		
			Inner contact	8 26 ±		
	II.	Sh. E.	First contact	10 50 ±	10 54 0	Definition poor now.
	II.	Tr. E.	,,	11 13 ±	11 19 0	Better definition.
			Bisection	11 15 ±		
			Second contact	11 18 ±		
15	I.	Tr. I.	Inner contact	10 41 ±	10 39 0	Much cloud.
19	III.	Oc. R.	Just off?	8 2 ±	8 1 0	Badly seen through cloud.
20	II.	Oc. R.	,,	8 36 ±	8 35 0	No trace of Sat. at 8^h 33^m.
25	I.	Ec. R.	First seen	6 21 40	6 21 35	Seen through thin cloud.
26	III.	Oc. D.	First contact	7 40 ±	7 41 0	Stormy.
			Bisection	7 42 ±		
			Just gone	7 45 ±		
Feb. 2	III.	Oc. D.	First contact	10 58 ±	10 58 0	Poor definition.
			Bisection	11 1 ±		
2	III.		Just gone	11 3 ±		
6	III.	Sh. E.	Certainly off	6 2 ±	6 0 0	Cloudy.
	I.	Oc. D.	Half gone	13 0 ±	12 58 0	,,
8	I.	Ec. R.	First seen	10 10 44	10 10 42	Seen through thin cloud.

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				G.M.T.	N.A.	
				h m s	h m s	
1884, Feb. 9	I.	Tr. E.	Inner contact	7 2 ±	7 3 0	Stormy.
	I.	Sh. E.	Off	7 33 ±	7 34 0	"
21	II.	Ec. R.	First seen	8 16 8	8 16 9	Observed at the Observatory of James S. Cooke Esq., Gomersal, near Leeds. 7-in. refractor.
			Fully bright	8 19 ±		
24	I.	Ec. R.	First seen	8 29 4	8 29 10	Much motion.
			Full disc	8 33 ±		
Mar. 1	I.	Tr. I.	First contact	10 2 26	10 2 0	Much cloud. Mr. Crossley at telescope.
			Bisection	10 4 6		" "
			Inner contact	10 5 51		" "
	I.	Sh. I.	Just within	11 0 ±	10 58 0	"
8	II.	Sh. E.	Inner contact	7 37 ±	7 42 0	"
			Half off	7 39 ±		
9	III.	Ec. D.	Fading	8 21 0	8 23 44	Cloud obscured planet.
10	I.	Tr. I.	First contact	6 19 30	6 18 0	
			Inner contact	6 24 0		Uncertain.
15	II.	Tr. E.	Inner contact	7 59 30	8 5 0	Good sky.
			Bisection	8 1 0		
			Outer contact	8 3 0		
	II.	Sh. I.	Bisection	7 25 0	7 24 0	E. C. at telescope.
			Just within	7 26 0		"
	II.	Sh. E.	Inner contact	10 14 0	10 19 0	
16	III.	Oc. D.	First contact	7 44 30	7 47 0	

				G.M.T. h m s	N.A. h m s	
1884, Mar. 16	I.	Oc. D.	First contact	11 49 0	10 49 0	
			Half gone	11 50 30		
			Just gone	11 52 0		
	III.	Oc. R.	First seen	11 15 0	11 20 0	
			Half off	11 16 0		
			Just off	11 17 30		Uncertain.
	III.	Ec. D.	Fading ?	12 18 0		
			Fading	12 20 0		
			Half bright ?	12 22 30		
			Just gone	12 27 1	12 24 7	
18	I.	Ec. R.	First seen	8 43 6	8 43 27	Clouds pass.
			Half bright	8 45 0		
			Full disc	8 47 0		
21	IV.	Ec. R.	First seen	8 16 34		
			Still faint	8 20 0	8 22 19	
			Not half disc	8 22 0		
			Full disc ?	8 30 0		
24	II.	Ec. R.	First seen	7 50 6	7 56 6	Clouds.
	I.	Tr. I.	First contact	9 59 0	9 59 0	
			Second contact	10 4 0		
25	I.	Ec. R.	First seen	10 39 1	10 38 49	E. C. Perhaps a few seconds late.
	I.	Oc. D.	First contact	7 6 30	7 8 0	
			Gone	7 10 0		

				G.M.T. h m s	N.A. h m s	
1884, Mar. 31	II.	Ec. R.	First seen	10 31 38	10 31 26	Probably 10ˢ late.
			Half disc	10 34 0		Uncertain.
			Full	10 37 0		,,
Apr. 2	I.	Tr. E.	Just off	8 40 0	8 39 0	Clouds.
	I.	Sh. E.	Inner contact	10 0 0	9 55 0	,,
	I.	Sh. I.	,,	7 37 0	7 35 0	Uncertain.
7	II.	Oc. D.	Outer contact	7 42 0	7 43 0	
			Half gone	7 44 0		
			Just gone	7 45 30		
Apr. 7	II.	Ec. R.	First seen	13 6 41	13 6 40	
9	I.	Tr. I.	Outer contact	8 16 0	8 13 0	Bad definition.
			Bisection	8 18 0		Uncertain.
			Inner contact	8 19 30		
	I.	Sh. I.	,,	9 31 0	9 30	
	I.	Tr. E.	,,	10 29 0	10 33 0	
			Bisection	10 32 30		
			Outer contact	10 34 30		
	I.	Sh. E.	Inner contact	11 45 0	11 50 0	Uncertain.
May 10	IV.	Ec. D.	Fading	9 58 0		
			Just gone	10 4 10	10 2 25	
	I.	Ec. R.	First seen	11 9 50	11 9 11	
			Full disc?	11 12 0		
9	I.	Tr. E.	Half off	9 12 0	9 14 0	

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				G.M.T.	N.A.	
				h m s	h m s	
1884, May 18	I.	Tr. E.	Just off	9 15 0		
26	I.	Ec. R.	First seen	9 29 5	9 29 2	
			Half full ?	9 31 0		
			Full	9 32 30		
Nov. 8	I.	Ec. D.	Fading fast	15 56 23	15 56 35	Clouds.
9	I.	Tr. I.	Outer contact	14 15 30	14 17 0	
			Inner contact	14 18 ±		Planet very low.
11	III.	Sh. I.	Just within	13 43 ±	13 41 0	Good sky.
	III.	Sh. E.	„	17 23 ±	17 24 0	
13	II.	Ec. D.	Last seen	18 15 34	18 15 26	Bad sky.
15	II.	Sh. I.	Just within	13 9 ±	13 10 0	
	II.	Tr. I.	First contact	15 39 ±	15 41 0	Bad sky.
	II.	Sh. E.	Just within	16 6 0	16 7 0	
	I.	Ec. D.	Fading	17 48 0	17 49 36	
			Just gone	17 50 6		
16	I.	Sh. I.	„	14 54 0	14 57 0	Uncertain: cloud.
	I.	Tr. I.	First contact	16 10 0	16 12 0	
			Last contact	16 13 0		
17	I.	Oc. R.	First seen	15 49 0	15 50 0	No definition.
22	II.	Sh. I.	Just on disc	15 44 0	15 43 0	Uncertain.
	III.	Oc. R.	First seen	16 27 0	16 28 0	Much cloud.
24	I.	Ec. D.	Fading	14 8 0	14 10 48	Cloudy.
29	III.	Ec. R.	First seen	15 18 57	15 19 19	Misty.